

**Allen, Dyer, Doppelt,  
Milbrath & Gilchrist, P.A.**

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**FACSIMILE COVER SHEET**

**TO:** Examiner Melvin C. Mayes - United States Patent and Trademark Office; Art Unit - 1734

**CLIENT NAME/NUMBER:** WA390/64724

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**FAX NO:** 571-273-8300

**FROM:** Jack G. Abid

**DATE:** December 11, 2006

**NUMBER OF PAGES (INCLUDING COVER SHEET):** 11

**COMMENTS/INSTRUCTIONS:**

Please see the attached documents with respect to the Examiner's Final Office Action of August 10, 2006 for U.S. Patent Application Serial No. 10/522,049.

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:	)
BYUN ET AL.	) Examiner: M. MAYES
Serial No. 10/522,049	)
	) Art Unit: 2841
Filing Date: JANUARY 20, 2005	)
	) Attorney Docket No. 64724
For: METHOD FOR CONNECTING MICRO-	)
CIRCUITS AND CONNECTION	)
STRUCTURE BY THE SAME	)

PRE-APPEAL BRIEF REQUEST FOR REVIEW

MS AF  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

Responsive to the Final Official Action of August 10, 2006, and in connection with the Notice of Appeal filed concurrently herewith, please consider the remarks set out below.

The Examiner rejected independent Claim 1 over the Anderson et al. patent in view of the Fuji et al. patent application. The Anderson et al. patent discloses a laminating process for interconnecting laminates including respective opposing conductive layers and dielectric coverlayers. The Anderson et al. patent further discloses a conductive adhesive layer of non-conductive material with conductive particles to interconnect the laminates. (Col. 13, lines 6-26). The dielectric coverlayers are selectively screen-printed over the conductive layers. (Col. 13, lines 27-31). The Anderson et al. patent further discloses curing the dielectric ink within an

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oven. (Col. 13, lines 50-57). The Examiner correctly notes that the Anderson et al. patent does not disclose an insulating resin solution, as recited in independent Claim 1, and looks to the Fuji et al. application for such.

The Fuji et al. application discloses a method for applying resin solution to the surface of a printed circuit. (Paragraphs 25-27). The Fuji et al. application further discloses subsequent drying of the resin to provide a hardened, electrically insulating, and impact resistant coverlayer. (Paragraph 29). The Fuji et al. application discloses a dryer exposing the resin to heat. (Paragraph 27; Claim 9). The Examiner contends it would have been obvious to use this method on the dielectric ink coverlayers disclosed in the Anderson et al. patent. The Examiner also contends that the motivation to combine the Anderson et al. patent and the Fuji et al. application was to provide a coverlayer with no voids.

Applicants respectfully submit that the Examiner's proposed combination of the Anderson et al. patent and the Fuji et al. application is improper. As an initial matter, Applicants submit that alleged motivation to combine is not disclosed in the primary Anderson et al. reference as the Examiner contends. The Anderson et al. patent teaches that the dielectric coverlayers are preferably selectively screen-printed over the conductive layers with a number of openings and apertures. (Col. 13, lines 26-31). In the alternative, the dielectric ink can be applied across the entire surface with subsequent laser or chemical

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etching to create the needed openings in the dielectric layer. (Col. 13, lines 32-45). Further, Applicants submit that the properties of the dielectric ink are critical to the operation of Anderson et al. Applicants point out that the Anderson et al. patent teaches that the metal-film laminate, (Col. 7, line 42), and the conductive adhesive, (Col. 15, line 65), may alternatively be in the form of a resin. Yet, the Anderson et al. patent discloses no such capability for the dielectric ink. For this reason alone, there is no proper motivation to combine disjoint pieces of the prior art as the Examiner contends.

Moreover, the proposed combination of the Anderson et al. patent and the Fuji et al. application produces a result that is inoperable. As recited in independent Claim 1, the claimed method includes heating the circuit boards and subsequently applying a predetermined pressure to a side of each circuit board opposite the anisotropic conductive adhesive so that corresponding electrodes are connected to each other. As suggested by the Examiner, if the resin of Fuji et al. was used to modify the Anderson et al. patent, the result would be inoperable since the resin of Fuji et al. would have been heated prior to the joining step. Using the now hardened, impact resistant, and electrically insulating resin of the Fuji et al. application, the conductive particles of the Anderson et al. patent would not penetrate the resin, in contrast to the embedded conductive particles depicted in Figure 2 of the Anderson et al. patent. Accordingly, for this reason also, there is no proper

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motivation to combine the references in the manner suggested by the Examiner.

The Examiner also contends that the Fuji et al. application is cited in the proposed combination simply to provide the process of applying the coverlayer from a resin solution and not the particular resin taught by the reference. Applicants submit that one of ordinary skill in the art, when considering combining the dielectric ink coverlayer of the Anderson et al. patent with the insulating coverlayer of the Fuji et al. application, would be taught away from the combination due to the aforementioned characteristics of the resin. A person of ordinary skill in the art will not selectively seize on the resin property of the Fuji et al. application while ignoring the fact that the actual resin taught would produce an inoperative result.

The Examiner contends that the Fuji et al. application's resin solution process does not require heat-based drying. Although, Applicants disagree with this contention by the Examiner, Applicants note that the Examiner's proposed combination is an attempt to produce the claimed invention, and the claimed invention requires "heating the circuit boards", as recited in Claim 1.

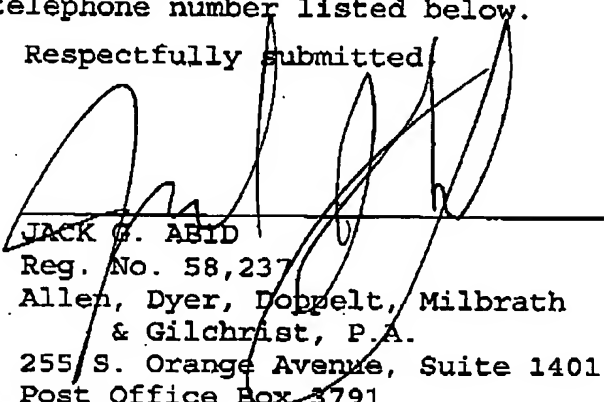
Accordingly, it is submitted that independent Claim 1 is patentable over the prior art. Its respective dependent claims, which recite yet further distinguishing features, are also patentable over the prior art and require no further discussion herein. A Notice of Allowance is respectfully

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requested in due course. Should any minor informalities need to be addressed, the Examiner is encouraged to contact the undersigned attorney at the telephone number listed below.

Respectfully submitted,



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CERTIFICATE OF FACSIMILE TRANSMISSION

I HEREBY CERTIFY that the foregoing correspondence has been forwarded via facsimile number 571-273-8300 to the Commissioner for Patents, Mail Stop AF, Alexandria, VA 22313-1450 this 11<sup>th</sup> day of December, 2006.

